

probably (5), in some instances, in the form of a vesicle similar to that found in higher cells.

#### ALGAE OF MISSOURI BOTANICAL GARDEN.

Ada Hayden (Rept. Mo. Botan. Garden, 1910) gives an account of the algae found in the pools, streams, etc., of the Missouri Botanical Garden. Preceding the systematic account is a description of the conditions in the garden and an analysis of the habitats of the algae. The field is peculiarly varied and rich, and the flora correspondingly so.

#### EDINGER'S DRAWING AND PROJECTION APPARATUS.

This apparatus was principally designed to facilitate the drawing of microscopic objects, up to even comparatively high magnifications, an image of the object being formed by direct projection on the drawing surface, where it may be traced with pencil or pen.

It is likewise adapted for throwing microscopic objects as well as lantern slides on the screen, by simply turning the entire apparatus into a horizontal position. It is also available for micro-photographic work, micro-photographs being taken by means of a camera, which is fitted with a dark slide accommodating plates up to 24x30 cm ( $9\frac{1}{2}$ x12 inches).

To obtain a sharp focus the bellows may be instantly detached from the dark slide holder, the image then appearing on a paper screen, which slides into the plate holder as a substitute for the ground glass focusing screen.

For all the foregoing work a powerful illuminant is essential, therefore the apparatus is supplied with a hand-feed, electric arc lamp taking 4 amperes. This lamp differs from most patterns in use in that the carbons are at right angles to one another, the positive being mounted in line with the optical axis of the instrument, such arrangement not only increasing the illuminating power by approximately 50%, but at the same time obviating almost entirely the unsteadiness usually found in other arc lamps. It can be run, with a suitable small rheostat, on any ordinary house current, direct or alternating.